

Main aircraft apron and typical based aircraft

4.1 INTRODUCTION

Airport facility requirements are identified by determining the ability of an airport to accommodate aeronautical activity based on projected demand. This is, in part, accomplished during the forecasting effort which projected aviation demand such as based aircraft and annual and peak hour operations. In this chapter, the existing airport facilities are reviewed in terms of their ability to accommodate the forecast demand. Any shortfalls are translated into physical needs such as transient aircraft parking and automobile parking. The planning estimates and recommendations set forth are based on guidelines established by FAA Advisory Circulars for airports.

4.2 FACILITY REQUIREMENTS

The airport facility requirements for improvements at Bagdad Airport have been separated into two categories: airside and landside. These facilities are further categorized as follows:

AIRSIDE

Runway	Taxiways
Lighting and Visual Aids	Airport Marking
Navigational Aids	Airspace
Runway Protection Zones	

LANDSIDE

Hangars	Aircraft Parking
Terminal	FBO Areas
Auto Parking	Fuel Facilities
Surface and Airport Access	Fire and Crash Rescue
Utilities	Fencing
Control Tower	Land Acquisition

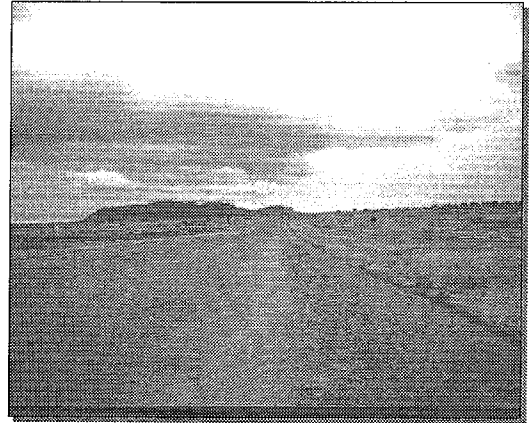
4.3 AIRSIDE REQUIREMENTS

Airside facility requirements include those facilities directly related to the arrival and departure of aircraft. The selection of the appropriate FAA design standard for the development of airfield facilities is based primarily upon the characteristics of the most demanding aircraft expected to use the airport. The most critical characteristics are the approach speed and the wingspan of the critical aircraft anticipated to use the airport both today and in the future. The planning for future aircraft use is particularly important, because design standards are used to plan separation distances between facilities that could be costly to relocate at a later date.

As discussed in Chapter 2 and consistent with FAA design criteria established in AC 150/5300-13, Bagdad Airport should continue to be designed to meet Basic Utility (BU) specifications for Airplane Design Group I and Approach Category B.

Airport design specifications are determined by analyzing the aircraft mix and most demanding airplanes(s) to be accommodated. Although one aircraft may determine runway length, another may determine runway pavement strength or other appropriate design standard.

The following sections detail criteria used to establish facility requirements and dimensions.



View of Runway end 23

4.3.1 Demand/Capacity Analysis

This section analyzes the capacity of the airfield and associated facilities. The demand/capacity analysis considers the impact of forecast aviation activity on several critical airfield facilities. A capacity analysis was conducted for the runway to provide estimates of hourly and annual capacities for existing facilities and future levels of aviation demand.

The purpose of this analysis is to determine the existing and future ability of the system to accommodate aircraft without significant delay and in a safe manner.

4.3.2 Airspace Demand/Capacity

Airspace reservations for the airport are described by FAA Order 7480.1A, "Guidelines for Airport Spacing and Traffic Pattern Airspace Areas." According to future activity estimates at Bagdad Airport, there will be no significant increase in airspace needed unless a non-precision straight-in or precision instrument approach is installed at the airport during the planning period.

Currently no airspace conflicts occur between Bagdad Airport and neighboring airports. Bagdad is also located within a military operations area (MOA). However, such operations are not expected to significantly impact the airspace capacity.

4.3.3 Airfield Demand/Capacity

The capacity of an airport is determined by several operational factors including airfield layout, meteorology, runway use, aircraft operation mix, percent arrivals, percent touch and go's, and exit taxiway locations. The Bagdad Airport has a single runway configuration with no

navigational aids or radar and is limited to light aircraft operations. Based on existing weather data, it is estimated that the weather conditions are 98 percent VFR and 2 percent IFR.

Runway use is generally determined by surface wind conditions and airfield layout. Percent arrivals reflect the arrival-departure split for aircraft operations. Discussions with local pilots indicate that runway use is divided roughly 60/40 percent between Runway 23 and 5. In addition, 100 percent of single-engine aircraft operations at Bagdad Airport are in Aircraft Approach Categories A and B. Touch and go operations are estimated at approximately 60 percent of local operations. This percentage is expected to remain constant during the planning period.

The airside capacity model to determine the operational capacity at Bagdad Airport is expressed in the following three terms:

- *Weighted Hourly Capacity*
- *Annual Service Volume*
- *Annual Aircraft Delay*

Weighted Hourly Capacity

The capacity analysis involves the computation of an hourly runway capacity during VFR and IFR conditions. Based on the single runway configuration and utilization, hourly capacity for the Bagdad Airport is estimated at 70 operations (VFR) and 40 operations (IFR) for existing Runway 05-23. This hourly capacity is well beyond the current peak hour demand estimate of one operation.

Annual Service Volume

Based on current FAA models, the ASV for Bagdad Airport's existing configuration is greater than 150,000 operations. This ASV indicates that the airport is currently operating at approximately 1.8 percent of capacity and is expected to reach 2.1 percent of capacity by the year 2017.

Annual Delay

Aircraft delay is expressed in terms of average delay per aircraft operation and total hours of annual delay. Delays occur to arriving traffic that must wait in the VFR pattern. Departing traffic must hold on the taxiway or the holding apron while waiting for the runway and final approach to be clear. In general, the FAA recommends consideration of development improvements to increase capacity when annual aircraft operations reach 60 percent of ASV or delays become excessive.

At present operational levels, annual delay at Bagdad Airport is nearly non-existent. Thus, the existing airfield capacity will more than adequately serve the projected aircraft operations through 2017.

4.3.4 Runway 05-23

In addition to capacity, the adequacy of the existing runway system was analyzed in terms of runway length, line of sight, pavement strength, and orientation.

Length

The existing Runway 05-23 is 4,575 feet long and 60 feet wide. Using FAA Advisory Circular 150/5300-13's FAA Runway Length model, key airport and runway data are compiled to determine existing runway needs. The airport elevation is 4,183 feet above mean sea level (MSL) and effective runway gradient for Runway 05-23 is .02 percent. The FAA Airport Design Model is used in the runway length analysis. **Table 4-1** summarizes the output of the FAA model. As shown, the existing runway length accommodates 75 percent of small airplanes (under 12,500 pounds or less maximum certified takeoff weight), but less than 95 percent utilizing the airport during summertime operations.

Table 4-1 Runway Data Requirements

AIRPORT AND RUNWAY DATA

Airport elevation 4,183 feet
 Mean daily max. temperature of the hottest month 96° F.
 Maximum difference in runway centerline elevation 15 feet
 Length of haul for planes more than 60,000 lbs 500 miles
 Dry runways

RUNWAY LENGTHS RECOMMENDED FOR AIRPORT DESIGN

Small airplanes with approach speeds of
 less than 30 knots 430 feet
 Small airplanes with approach speeds of
 less than 50 knots 1,130 feet

Small airplanes with less than 10 passenger seats

75 percent of these small airplanes 4,190 feet
 95 percent of these small airplanes 5,500 feet
 100 percent of these small airplanes 5,810 feet
 Small airplanes with 10 or more passenger seats 5,810 feet

Large airplanes of 60,000 pounds or less

75 % of these large airplanes at 60 % useful load 6,610 feet
 75 % of these large airplanes at 90 % useful load 8,750 feet
 100 % of these large airplanes at 60 % useful load 9,800 feet
 100 % of these large airplanes at 90 % useful load 11,150 feet

Line of Sight Compliance

According to FAA AC 150/5300-13, Chapter 5, pg. 56, "Line of Sight Standard", an acceptable runway profile permits any two points above the runway centerline to be mutually visible for the entire length of the runway. For Bagdad, this means that a section approximately 600 feet from Runway 05 end is below grade of the runway line of sight standards.

It is recommended that this area be reconstructed, in conjunction with the pavement maintenance program, to meet FAA standards. Additional discussion is presented in the following Alternatives Chapter.

Pavement Strength

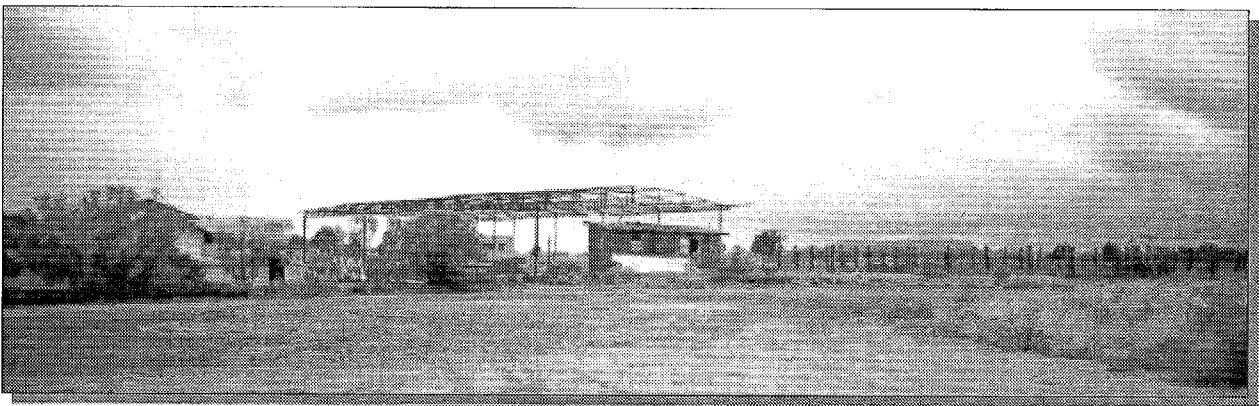
The existing pavement strength at Bagdad Airport is 4,000 pounds SWL. Although over 90 percent of the aircraft that utilize the airport are less than 4,000 pounds maximum takeoff weight (i.e. Beech Bonanza, Cessna 150 & 177, Duchess, Barons), there are some operations conducted by aircraft greater than 4,000 pounds. Further ADOT Aeronautics Division recommends that airports serving small aircraft exclusively plan for pavement a strength of up to 12,500 pounds SWL. Therefore, the existing pavement strength at Bagdad should be strengthened before the end of the planning period.

While the current runway configuration can accommodate the operations at Bagdad Airport within the twenty-year planning period, there is an immediate need to establish a pavement maintenance program to prevent further deterioration.

Wind Coverage and Runway Orientation

According to the previous 1982 Master Plan, preliminary wind records taken from July 1956 through January 1958 by Bagdad Copper Corporation suggest that the existing alignment of the primary runway (Runway 05-23) does not provide 95 percent wind coverage (1982 Master Plan, pg. 25). However, historical wind data is unavailable other than preliminary findings mentioned in the 1982 Master Plan. Therefore, it is recommended that a remote wind recorder be placed at the airport for a minimum of 12 months. Arizona Department of Transportation, Aeronautics Division has a wind recorder that is tentatively scheduled for placement at Bagdad Airport sometime this year (2000). The wind recorder will remain at Bagdad Airport for a minimum of one year. However, if equipment is available, it is recommended that wind data collection continue for a minimum of five years.

Since wind data is unavailable, it is uncertain whether a crosswind runway is justified. However, several possible alternatives were discussed in the previous Master Plan. While the construction of a crosswind runway is one method to obtain crosswind coverage, another option is to increase the primary runway width to partially compensate for crosswinds. Typically, this means widening to the next higher Design Group width – Group II at 75 feet for Bagdad.



View to the north of main hangar and airport entrance

4.3.5 Taxiway Exits

The northernmost taxiway exit measures 30 feet wide and is in fair to poor condition. The southernmost taxiway exit, which connects to the main aircraft parking apron is 35 feet wide and is in fair condition. Currently, the taxiways meet FAA design criteria, which states that taxiways should be designed with a minimum of 25 feet (AC 150/5300-13) in width. The taxiway pavement should be maintained as part of the airfield pavement maintenance program established by FAA standards. Further, the existing pavement strength of 4,000 pounds SWL should be upgraded to 12,500 pounds SWL based on ADOT Aeronautics' recommendation.

Parallel Taxiway Option

There is no parallel taxiway to the runway at Bagdad Airport. According to FAA design criteria, "a basic airport consists of a runway with a full length parallel taxiway, an apron and connecting transverse taxiways between the runway, parallel taxiway and the apron" (AC 150/5300-13 CHG 4, pg. 33). However, the low number of aircraft operations and more than adequate airfield capacity offer little justification for a parallel taxiway. However, a parallel taxiway may be justified beyond the 20-year planning period. Many airports similar to Bagdad have operated without a parallel taxiway until annual operations reached 15,000 to 20,000.

4.3.6 Lighting and Visual Aids

Runway and Taxiway Connectors

The current runway lighting is a radio-controlled Low Intensity Runway Lighting (LIRL) system. These lights are in poor condition and should be replaced.

According to the FAA AC 150/5340-1E, the Medium Intensity Runway Edge Lighting (MIRL) system is recommended for all visual and non-precision runways intended to be used at night or during low light or visibility conditions. Ultimately, Runway 05-23 should be equipped with a MIRL system with a Remote Maintenance Subsystem (RMS) to replace the existing LIRL system. Since the airport is unattended, the RMS will allow lighting control via air-to-ground VHF radio from any aircraft.

Reflective markers at taxiway exits are also recommended to improve the safety of nighttime aircraft movements on the airport and to help eliminate inadvertent taxiing off paved surfaces.

The current threshold lights installed are partially functional. Recognizing that the existing lights at Bagdad Airport are inadequate for safe nighttime operations, it is recommended that Runway End Identifier Lights (REILs) be installed to provide rapid and positive identification of approach end threshold at Runway 23. In this case, the REIL system would be most effective due to the system's easy identification during nighttime operations.

Rotating Beacon and Wind Tee

According to AC 150/5300-13, Chapter 6, the airport rotating beacon should be within 5,000 feet of the runway and mounted high enough above the surface so that the beam sweep, aimed 2 degrees or more above the horizon, is not blocked by any natural or manmade object. The airport is equipped with a pole-mounted six-inch rotating beacon that is adequate and within FAA standards.

There is also a standard wind tee with a light between the rotating beacon and main hangar area of the airfield. The wind tee is fully functional and is adequate through the planning period.

4.3.7 Airfield Markings

The airfield was restriped and marked in November 1998. However, the apron areas and taxiway exits remain unmarked. According to FAA AC 150/5340-1E, the existing tiedown area and taxiway area should also be striped and marked.

4.3.8 Navigational Aids

The Bagdad Airport currently does not have any navigational aids. According to users, navigational signals from the PRESCOTT VHF Omnidirectional/Tactical Air Navigation Station (VORTAC) and other stations have been reported by pilots as being weak or totally lost due to the surrounding terrain.

According to ADOT's Navigational Aids and Aviation Services Special Study, a GPS 5 with one-mile visibility minimums was initially analyzed for potential installation at Bagdad Airport. The study established an instrument approach with minimums that "correlate with airport landing surface and design standards to which airport facilities should be developed" (Pg. 5-22, QED). However, the cost/benefit assessment was based on a SANS projection of operations which is about seven times higher than actual aircraft operations. The final GPS analysis in the study does not indicate that Bagdad Airport meets all applicable standards for the GPS system.

Initially, an NDB (non-directional beacon) could eliminate the issue of weak and lost signals for pilots. However, due to lack of future NDB funding support from ADOT and the FAA, it is recommended that a GPS system be installed, after further evaluation by the County and when economically feasible.

4.3.9 Local Traffic Pattern

The current traffic pattern at Bagdad is a standard left-hand pattern for uncontrolled airports. The forecasts indicate an uncontrolled airfield will be adequate through the twenty-year planning period.

4.3.10 Runway Protection Zones (RPZs)

The Runway Protections Zones are controlled by the County under easement agreements and are consistent with visual approaches for small aircraft.



Based Aircraft at Bagdad

4.3.11 Runway Safety Area (RSA)

FAA design criteria for Runway Safety Areas require 240 feet off each runway end for B-I runways. According to the FAA 5010 Form, an inspection conducted in 1999 identified both runway safety areas are in compliance, however the form noted that there are obstructions (bushes at three feet high) approximately 72 feet away from Runway 23 end. It is recommended that Yavapai County conduct an inspection for removal of the obstructions within the RSA.

4.4 LANDSIDE REQUIREMENTS

The purpose of this section is to determine the space requirements during the planning period for the following components of the general aviation landside types of facilities:

- Hangars
- Aircraft Parking Apron
- Terminal Building
- Fueling Facilities
- Fixed Based Operator (FBO)
- Auto Parking
- Surface and Airport Access
- Aircraft Rescue and Firefighting Facilities (ARFF)
- Utilities
- Air Traffic Control Tower (ATCT)
- Security and Fencing
- Land Acquisition and Control

The capacities and capabilities of the various components of the existing terminal area are examined in relation to projected demand to identify future landside facility needs.

4.4.1 Hangars

The demand for hangar facilities is dependent upon the number and types of aircraft expected to be based at the airport. Actual percentages of based aircraft desiring hangar facilities will vary across the country as a function of local climatic conditions, airport security, and owner preferences. This percentage will also vary with value and sophistication of the aircraft and will typically range anywhere from 20 to 80 percent of based aircraft.

Hangar facilities are generally classified as conventional hangars, T-hangars, or shades. These different types of hangar facilities offer varying degrees of privacy, security, and protection from the elements.

The existing hangar facilities at Bagdad Airport include a T-hangar (1 structure/2 spaces) and large box/conventional hangar (1 structure/2 spaces), which are currently occupied. The existing hangars are located on the north side of the runway by the entrance to the airport. These hangars are old, but in fair condition. Due to the mild climate in the Bagdad area, an estimated 80 percent of aircraft owners are not expected to desire hangar space. Therefore, 20 percent will require hangar facilities. **Table 4-2** summarizes the demand for hangar facilities. Since there are two existing hangars, which can accommodate two aircraft each, the existing hangars are adequate during the planning period.

Table 4-2 Hangar Demand

Based Aircraft:	Existing	2002	2007	2017
Single Engine	14	15	15	16
Multi-Engine	0	0	0	0
Helicopter & Turbine	0	0	0	0
Aircraft to be Hangared:	2	3	3	3
Single Engine	2	3	3	3
Multi-Engine	0	0	0	0
Helicopter & Turbine	0	0	0	0

4.4.2 Aircraft Parking Apron

Adequate aircraft parking apron should be provided to accommodate those local aircraft not stored in hangars as well as all transient aircraft under most conditions. At Bagdad Airport, apron and tiedowns for both local and transient aircraft are co-located on the existing main apron.

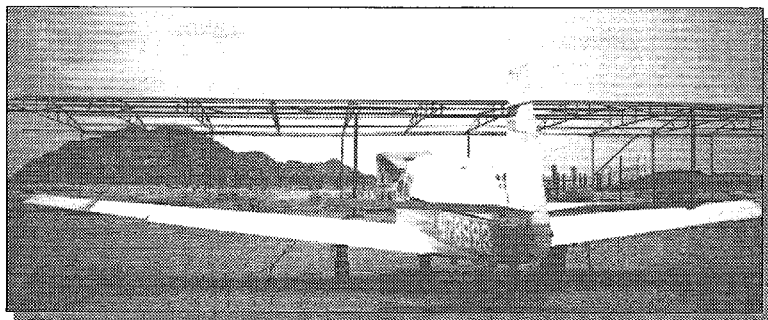
Aircraft parking area requirements are based on 340 square yards for Airport Design Group I, Approach Categories A & B. As shown in **Table 4-3**, 16 parking spaces for non-hangared based and transient aircraft will be required by the year 2017.

Table 4-3 Aircraft Parking Forecast				
Based/Transient Parking	1997	2002	2007	2017
Non-Hangared Based Aircraft	12	12	12	13
Non-Hangared Transient Aircraft (@ 50% park all day)	2	2	3	3
TOTAL Aircraft	14	14	15	16
Apron Requirements @ 340 s..y. + 50% circulation				
TOTAL (7,240 s.y. existing)	7,140	7,140	7,650	8,160
S.Y. Requirements (cumulative)	-0-	-0-	510	1,020
Aircraft Space Requirement	0	0	1	2

Since the existing apron accommodates 14 spaces, the apron area will be adequate through the first phase of the planning period. However, one additional aircraft parking space will be needed by 2007 (Phase II) and one more by 2017 (Phase III). Furthermore, existing shades (partially constructed, but never completed) on the main apron area need to be removed and both aprons need to be clearly marked for tiedowns and taxilanes.

4.4.3 Terminal Building

Because of the low volume of aviation activity at the airport, no Terminal Building exists at Bagdad. Although Terminal space requirements are usually based on a square footage per passenger basis, certain minimum facilities should be provided regardless of passenger volume.



Main aircraft apron and based aircraft

The methodology utilized to examine Terminal Building needs generally uses design hour pilot/passenger levels. Space requirements were determined using 100 square feet per design hour pilot and passenger. **Table 4-4** outlines the terminal space requirements for a terminal building at Bagdad Airport during the planning period.

Table 4-4 Terminal Building

Demand				
	1997	2002	2007	2017
Peak/Design Hour Pilot/Passengers	2	2	2	2
Calculated Terminal Bldg by Design Hour Passengers (s.f.)	200	200	200	200
Total Terminal Bldg Area (Min. s.f.)	200	200	200	200

Due to the small number of users, it is feasible to provide minimum facilities. A facility with restrooms, pilot seating area and public telephone is recommended. This 200 square-foot building would accommodate the basic needs with minimal maintenance needed.

4.4.4 Fueling Facilities

Bagdad Airport does not have an existing fuel facility. Due to the airport's relative distance from other neighboring airports with fuel service, consideration has been given to forecasting local aviation gas demand. Based on past experience with other rural airports in the state, the average fuel consumption per operation is estimated at 10 gallons. Assuming that operational consumption remains constant, fuel requirements can be forecast by week from activity projections as shown in Table 4-5.

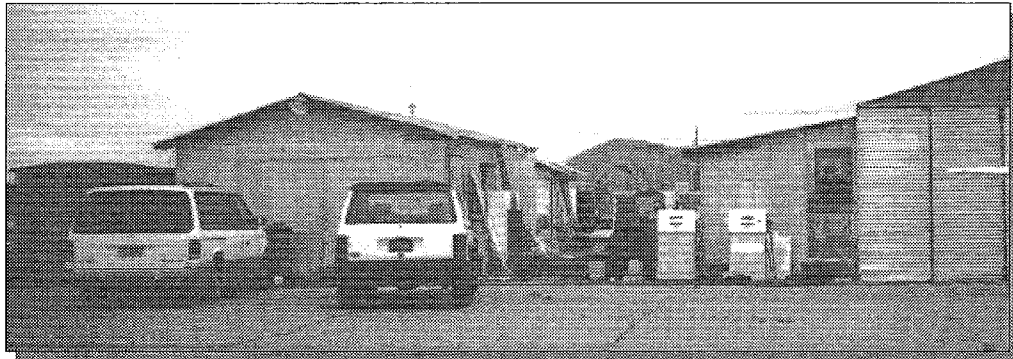
Due to the projected low volume of fuel usage at Bagdad Airport, fueling facilities will not be required within the twenty-year planning period. There are airports within a 50-mile radius that can handle present and future fuel needs of Bagdad Airport.

4.4.5 Fixed Based Operator (FBO)

Due to the existing and projected low levels of aviation activity, there are no plans for fixed based operator services at Bagdad Airport. However when activity levels increase, services can be provided at the airport. (see Chapter 5, Exhibit 5-2)

Table 4-5 Fuel Requirements

Year	Annual Operations	Weekly Fuel Usage (gallons)
2002	2,800	538
2007	3,000	577
2017	3,000	577



Main hangar area

4.4.6 Auto Parking

The requirements for short-term (daily) public vehicle parking may also be determined as a function of the design hour pilots and passengers. The total number of parking positions needed is projected on the basis of 1.3 spaces per design hour passenger and 350 square feet per parking space. The auto parking forecast for Bagdad Airport is summarized in **Table 4-6**.

Table 4-6 Auto Parking Forecast					
	Capacity	1997	2002	2007	2017
Design Hour Pilot/Passenger	--	2	2	2	2
Total Auto Parking	25	3	3	3	3
Total Auto Parking (s.f.)	8,750	1,050	1,050	1,050	1,050

The table identifies parking capacity in the first column and demand from 1997-2017. Presently, there is approximately 8,750 square feet of unpaved parking area available, which is capable of parking up to 25 vehicles. In the future, all subsequent landside development should provide more than adequate parking for its projected operations. There will be no further plans for additional parking; however, paving and continued maintenance of the parking area is recommended within the planning period.

4.4.7 Surface and Airport Access

Yavapai County acquired a public easement from Phelps Dodge Bagdad Inc. (formerly Cyprus Bagdad Mining Company) for the airport access road. The airport access road extends 1-1/2 miles and consists of a two-lane graded road from Lindahl Road to the airport. The entrance is located to the north and identified as "Airport Road."

The road continues to the mining area. About half of the road is paved and the remaining is graded dirt roadway. The existing road is well maintained and accommodates local traffic and airport traffic without safety concerns. Signs directing vehicles to the airport from the community are inadequate. It is recommended that additional signs be posted within the Town of Bagdad to the airport.

4.4.8 Aircraft Rescue and Firefighting Facilities (ARFF)

Since there is no history or indication of anticipated scheduled air service for Bagdad Airport, there is no on-airport ARFF facility required during the planning period. According to local residents, the Fire Department, which provides rescue services, is within five minutes of the airport. The Bagdad Fire Department and local Hospital facilities are adequate to meet operational requirements through 2017.

4.4.9 Utilities

The existing water system consists of an 8-inch water line that supplies water to the East Hangar area from the Mining Company. Additional water hookups to the West Hangar and proposed Terminal Building are needed. A water tank, located west of the main apron, supplies the airport. This 10,000-gallon tank, maintained and replenished by the Mining Company, provides adequate water storage capabilities through the planning period.

The existing natural drainage on the airport runs from North to South originating from a culvert under the runway midpoint that enables runoff North of the runway to be channeled to the South. Although two smaller culverts have been installed across the connecting taxiways, ponding has occurred in these areas. Ponding has also occurred in the apron areas. Additional culverts for the runway and apron areas are anticipated in the future to protect the integrity of pavement and asphalt.

Phelps Dodge Bagdad, Inc. provides the electric. As indicated by current tenants, the existing electric facilities are inadequate and may not be to standard. Power requirements for the airport will change with the proposed installation of a new lighting system and proposed Terminal building.

These proposed developments may increase power demand or change the types of power served. It is recommended that Yavapai County assess the existing electrical situation. Electrical system upgrades should accompany other proposed facility improvements.

TableTop Telephone Company supplies the telephone service at Bagdad Airport. The lines run from the north to the south of the runway to an old FAA facility. It is recommended that the telephone lines be re-routed to the main terminal area within the first phase of the planning period for public accessibility.

There are currently no sewage facilities at the airport. It is recommended that a portable sewage facility be developed with the Terminal building development.



View to the north toward Runway 23 end

4.4.10 Air Traffic Control Tower (ATCT)

According to the Airways Planning Standard Number 1 (APS-1) for establishment of a control tower, an airport becomes eligible for an FAA tower when annual operations reach 200,000. Bagdad Airport's forecast of 3,000 annual operations in 2017 precludes the installation of a FAA-funded control tower within the planning period. While safety and cost/benefit considerations make a contracted tower (privately owned) a viable option for some airports, this is not an option for Bagdad.

4.4.11 Security and Fencing

There are sections of the perimeter fencing at both ends that penetrate the runway's primary surface (FAR Part 77, Objects Affecting Navigable Airspace). The closest part of the fence is 218 feet away from runway centerline of 23 end. Relocation of 139 feet of fencing at Runway 23 end is needed. At Runway 03 end, the fence is located 304 feet from the runway and needs to be relocated an additional 61 feet. It is recommended that Yavapai County conduct an official survey of the fence line to determine actual height penetration.

Airport users have indicated that the current perimeter fencing is inadequate to prevent large wildlife and human incursions on the airfield. New fencing, 8-feet high topped with 4-strand barbed wire game fence, and additional warning signs are recommended to improve safety and minimize security concerns. In addition, it is recommended that Yavapai County and other appropriate agencies establish policies to address safety and security issues at the airport.

4.4.12 Land Acquisition and Control

As of March 21, 2000, Yavapai County owns the Bagdad Airport, which consists of approximately 97 acres of property for airport use with additional easements from Phelps Dodge Bagdad Inc. for Airport Road and the original runway protection zones.

4.5 SUMMARY

This chapter has examined the airport's ability to accommodate existing and forecast aviation activity. As a result, several facility deficiencies have been identified at the airport. The existing deficiencies will become more prominent in the future as activity at the airport increases. Therefore, measures must be taken to alleviate these deficiencies and accommodate future aviation activity.

The required development presented in **Table 4-7** will not only improve or correct existing deficiencies, but also provide the modern and efficient facilities necessary to attract and encourage additional development and services. The next step in the master planning process is to analyze various alternatives capable of providing the necessary facilities. Chapter Five will examine several alternatives, assess their relative strengths and weaknesses, and recommend a development plan for the future of Bagdad Airport.

Table 4-7 Facility Requirements Summary

AIRSIDE

Runway 05-23 @ 4,550 feet long

Runway length adequate for future operations; increase pavement strength to 12,500 pounds SWL.

Wind Coverage

Does not provide 95% for existing alignment of Runway 05-23; wind data not available.

Option for wind recorder from ADOT; optional widening of primary runway in lieu of crosswind runway.

Taxiways – two connecting taxiways exits

Connecting taxiway exits are adequate in width and strength

Aircraft Parking

Two (2) additional spaces for local and itinerant aircraft parking will be needed within the planning period.

Lighting and Visual Aids

Replacement and maintenance of existing lighting to MIRL with RMS; taxiway exit reflectors recommended to prevent taxiing off pavements; REIL system on Runway 23 end.

Airport Markings

Marking existing tiedown area and taxiway exits are required under FAA Design.

Navigational Aids

Potential installation of GPS will eliminate weak or lost signals.

Airspace

No additional airspace required.

Runway Protection Zones/Safety Area

Runway Safety area on Runway 23 end needs to be surveyed to verify 240-foot compliance.

LANDSIDE

Fueling Facilities

No fueling facilities anticipated

Control Tower

Uncontrolled airfield will be adequate through the twenty-year planning period.

Terminal Building

Basic Terminal Building may be needed due to large percentage of itinerant operations. Approx. (200 sq. feet)

Fixed Based Operator (FBO)

No operators are anticipated.

Auto Parking @ 25 spaces (unsurfaced lot east of aircraft parking apron)

No additional parking anticipated; current parking spaces are adequate through long-term planning period.

Surface and Airport Access

Existing roads will accommodate future local and itinerant traffic; additional directional airport signs will be needed from local town to the airport.

Drainage

Additional culverts are anticipated for pavement preservation and maintenance purposes.

ARFF- Firefighting and Crash Rescue Facilities

Adequate rescue services are available by the Bagdad Fire Department and local hospital.

Utilities

If new terminal is proposed, portable sewage facilities will be needed; telephone service will be needed to the north side of the airfield; electrical facilities need to be evaluated for non-standard configuration.

Fencing

Yavapai County should survey for Part 77 penetration of fencing within the primary surface.

Upgrade to 8-foot, 4-strand barbed wire game fencing and additional warning signs to prevent human incursions to the airfield.

Land Acquisition

Phelps Dodge Bagdad, Inc. deed conveyance of the airport to Yavapai County